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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/045,674	10/25/2001	Robert C. Ladner	10280-140003	2458

26161 7590 07/20/2006

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EXAMINER	
EPPERSON, JON D	

ART UNIT	PAPER NUMBER
1639	

DATE MAILED: 07/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/045,674	LADNER ET AL.	
	Examiner	Art Unit	
	Jon D. Epperson	1639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 May 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *117-226* is/are pending in the application.

4a) Of the above claim(s) *148-179,207-209,211 and 213* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *117-147,180-206,210,212 and 214-226* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/4/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status of the Application

1. The Response filed May 9, 2006 is acknowledged.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.

Status of the Claims

3. Claims 1-116 were pending. Applicants canceled claims 1-116 and added claims 117-226. Claims 148-179, 207-209, 211 and 213 are drawn to non-elected species and/or inventions and thus these claims are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), there being no allowable generic claim. Therefore, claims 117-147, 180-206, 210, 212 and 214-226 are examined on the merits in this action (e.g., see 5/9/06 Response, page 2, "claims 117-147, 180-206, 210, 212 and 214-226 read on the elected species").

Priority

4. Applicants have not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. §§ 119(e) or 120 as follows:

> This application is a continuation-in-part of United States patent application 09/837,306, filed on April 17, 2001 (referred to herein as '306), which claims benefit of 60/198,069, filed on April 17, 2000 (referred to herein as '069). However, the

applications upon which priority is claimed fail to provide adequate support under 35 U.S.C. § 112 for the claims of this application. Specifically, the '069 application does not provide support for the currently claimed "library comprising a collection of members of a family" limitation (e.g., see independent claims 117-120, 203, 218, 219 and 220). The '069 provisional application only provides support for " human Fab" libraries made by "phage display" (e.g., see 60/198,069 application, page 1, "Area of Invention" section, "The present invention relates to construction of libraries of human Fabs displayed on filamentous phage"). Thus, the '069 provisional application only provides support for a library of "fusion" peptides that produce "human Fab" or alternatively, proteins that are encoded by nucleic acids that contain sequences corresponding to both "human phage" and "Fab" genes. Thus, the '069 provisional application does not provide support for the broader scope of the term "library" that includes members other than human Fabs derived from sources other than phage. In addition, the Examiner cannot find support for most of the currently claimed isotypes (i.e., IgG, IgA, IgE and IgD as recited in claims 136-139, 185 and 215) in the '306 application. If applicants believe this to be in error, applicant must disclose where in the specification support for these limitations can be found (i.e., page and line number).

Therefore the filing date of the instant application is deemed to be its actual filing date with respect to claims 136-139, 185 and 215 filed on ***October 25, 2001*** and the date of the '306 application filed on ***April 17, 2001*** for all other claims examined on the merits (i.e., claims 117-135, 140-147, 180-184, 186-206, 210, 212, 214, 216-226).

Withdrawn Objections/Rejections

5. All rejections and/or objections are withdrawn in view of Applicants' cancellation of all pending claims and/or arguments and/or arguments on pages 26-28 of the 1/19/06 response and/or amendments to the specification with the exception of the objection to the abstract as noted below.

Maintained Objections

Specification

6. The abstract of the disclosure is objected to because it does not allow the public generally to determine quickly from a cursory inspection the nature and gist of the invention. Applicants should amend the abstract so that it corresponds to at least one independent claim. For example, Applicants should describe the currently claimed "library" instead of the "method" that is set forth in the abstract. See 37 C.F.R. § 1.72. Should Applicants amend the claims in their next reply, the amended abstract should take into account any further limitations added to the broadest independent claim. In addition, the abstract is objected to because it does not include the technical disclosure of the improvement. Correction is required. See MPEP § 608.01(b).

New Rejections and/or Objections

Claim Rejections - 35 USC § 112, second paragraph

7. Claim 117-147, 180-206, 210, 212 and 214-226 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject

matter which applicant regards as the invention.

A. ***Claims 187 and 217*** are indefinite because these claims recite an unknown trademark as a limitation (e.g., "geneRACEJ"). Note also the following from MPEP 2173.05(u):

> If the trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of the 35 U.S.C. 112, second paragraph. *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product.

Claims Rejections – 35 U.S.C. 102/103

8. Claims 117-139, 183-206, 210, 212 and 214-226 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Heddle et al. (Heddle, R. J.; Rowley, D. "Dog immunoglobulins. I. Immunochemical characterization of dog serum, parotid saliva, colostrum, milk and small bowel fluid." *Immunology*, **1975**, *29*, 1, pages 185-195) as evidenced by Roitt et al. (Roitt, I.; Brostoff, J.; Male, D. Immunology Sixth Edition. New York: Mosby **2001**, page 67-70 and 80).

For ***claims 117-123, 183, 184, 186-204, 214, 216-226***, Heddle et al. disclose a library of proteins comprising a collection of members of an antibody family, which anticipates the claimed invention (e.g., see page 190, Table 3 wherein a library of proteins is disclosed comprising a collection of IgA, IgM and IgG members of a dog immunoglobulin family). In addition Heddle et al. the family comprises a diversity of peptides, polypeptides or proteins (e.g., antibody proteins in this case). Furthermore, although Heddle et al. do not explicitly state that they are producing a non-biased library,

the Examiner contends that this feature is inherently disclosed by the reference because Heddle et al. do not use any PCR techniques that would produce such a bias (see experimental section showing that library was produced by isolating samples from dogs; see also specification, page 4, lines 5-14, "These methods [of the present invention] are not biased toward DNAs that contain native sequences that are complementary to the primers used for amplification."). Alternatively, the examiner contends that word "portion" in the phrase "at least a nonbiased portion" (e.g., see claim 117, line 3) would encompass a "single" peptide, polypeptide or protein member, which all libraries inherently contain. Furthermore, the Examiner contends that the "encoded by DNA sequences comprising at least in part nucleic acid sequences" would encompass a "single" nucleotide from a "single" member of the library, which all nucleic acid libraries inherently contain. Finally, the Examiner notes that Applicants' claims use "comprising" terminology that would not preclude the addition of "biased" members into the library.

Although Heddle et al. do not disclose that their libraries are formed by the same method steps as recited in claims 117-123, 183, 184, 186-202, 203-204, 214, 216-225, the products of Heddle et al. appear to be the same as those recited by the instant claims, regardless of their method of manufacture (e.g., see MPEP 2113). That is, both methods produce a library comprising a collection of members of a family; the family comprising a diversity of peptides, polypeptides or protein; the collection comprising at least a nonbiased portion of the diversity of the family.

The libraries of Heddle et al. meet all of the limitations of the claimed library (see above) except for the product-by-process limitations and thus would either anticipate or

render obvious the claimed library because the process of Heddle et al. produce the same or a substantially similar product (see above). See MPEP § 2113, "'[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.' *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)." Here, Applicants claims are drawn to a "library" (i.e., a product), but are defined by various method steps that produce a library of corresponding nucleic acids (e.g., see claim 119, "A library ... produced by a method comprising the steps of:") and, as a result, represent "product-by-process" claims. One of ordinary skill would expect the library of a diverse family of peptides, polypeptides or proteins to be the same no matter how it was synthesized. When the prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claimed in a product-by-process claim, a rejection based alternatively on either 35 U.S.C. 102 or 35 U.S.C. 103 is eminently fair and acceptable. PTO is not equipped to make and then compare products. *In re Brown*, 459 F.2d 531, 173 USPQ 685 (CCPA 1972).

For ***claims 124-139, 185, 205, 206 and 215***, Heddle et al. disclose, for example, IgA, IgM and IgG, which represent immunoglobulins (e.g., see page 190, Table 3). For claims 128-131, Heddle et al. do not explicitly state that the IgA, IgM and IgG molecules comprise a Fab, but the Examiner contends that this element is inherently disclosed by

the Heddle et al reference as evidenced by Roitt et al. (e.g., see page 69, figure 4.6, section (1), showing "Fab" portion of molecule; see more generally pages, 67, 68 and 70 detailing the structures of the IgG, IgM and IgA molecules). For claims 132-135, Heddle et al. do not explicitly state that IgA, IgM and IgG molecules comprise a heavy chain, but the Examiner contends that this element is inherently disclosed by the Heddle et al. reference as evidenced by Roitt et al. (e.g., see page, figure 4.6, section (1), showing heavy chain portion of the molecule; see more generally pages, 67, 68 and 70 detailing the structures of the IgG, IgM and IgA molecules). For claims 136-139, Heddle et al. disclose IgM, IgG and IgA (e.g., see page 189, Table 3). For claim 206, Heddle et al. do not explicitly state that the IgA, IgM and IgG molecules comprise an FR1 region, but the Examiner contends that this element is inherently disclosed by the Heddle et al. reference as evidenced by Roitt et al. (e.g., Roit, page 80, column 1, middle paragraph; see also figure 4.28 showing that all antibodies contain an FR1 region).

For ***claims 210 and 212***, Heddle et al. do not explicitly state that the IgA, IgM and IgG molecules comprise an FR3 region, but the Examiner contends that this element is inherently disclosed by the Heddle et al. reference as evidenced by Roitt et al. (e.g., Roit, page 80, column 1, middle paragraph; see also figure 4.28 showing that all antibodies contain an FR3 region). In addition, Heddle et al. do not explicitly state that IgA, IgM and IgG molecules comprise a light chain, but the Examiner contends that this element is inherently disclosed by the Heddle et al. reference as evidenced by Roitt et al. (e.g., see page, figure 4.6, section (1), showing light chain portion of the molecule; see more generally pages, 67, 68 and 70 detailing the structures of the IgG, IgM and IgA

molecules). In addition, Heddle et al. do not explicitly state that IgA, IgM and IgG molecules comprise a heavy chain, but the Examiner contends that this element is inherently disclosed by the Heddle et al. reference as evidenced by Roitt et al. (e.g., see page, figure 4.6, section (1), showing heavy chain portion of the molecule; see more generally pages, 67, 68 and 70 detailing the structures of the IgG, IgM and IgA molecules).

9. Claims 117-147, 180-206, 210, 212 and 214-226 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hrncir et al. (Hrncir et al. "Anticardiolipin antibodies in diffuse connective tissue diseases in the IgG, IgM and IgA isotypes" *Vnitrni Lekarstvi.* **November 1999**, *36(11)*, 1041-1049) as evidenced by Roitt et al. (Roitt, I.; Brostoff, J.; Male, D. Immunology Sixth Edition. New York: Mosby **2001**, page 67-70 and 80). .

For ***claims 117-123, 183, 184, 186-204, 214, 216-226***, Hrncir et al. disclose a library of proteins comprising a collection of members of an antibody family, which anticipates the claimed invention (e.g., see page 1041, translation page 1, Summary wherein a library of proteins is disclosed comprising a collection of IgG, IgM and IgA isotypes from patients with systemic lupus erythematosus (SLE)). In addition Hrncir et al. the family comprises a diversity of peptides, polypeptides or proteins (e.g., antibody proteins in this case). Furthermore, although Hrncir et al. do not explicitly state that they are producing a non-biased library, the Examiner contends that this feature is inherently disclosed by the reference because Hrncir et al. do not use any PCR techniques that

would produce such a bias (see "Participant Group and research methods" section showing that library was produced by drawing blood samples from patients with SLE; see also specification, page 4, lines 5-14, "These methods [of the present invention] are not biased toward DNAs that contain native sequences that are complementary to the primers used for amplification."). Alternatively, the examiner contends that word "portion" in the phrase "at least a nonbiased portion" (e.g., see claim 117, line 3) would encompass a "single" peptide, polypeptide or protein member, which all libraries inherently contain. Furthermore, the Examiner contends that the "encoded by DNA sequences comprising at least in part nucleic acid sequences" would encompass a "single" nucleotide from a "single" member of the library, which all nucleic acid libraries inherently contain. Finally, the Examiner notes that Applicants' claims use "comprising" terminology that would not preclude the addition of "biased" members into the library.

Although Hrncir et al. do not disclose that their libraries are formed by the same method steps as recited in claims 117-123, 183, 184, 186-202, 203-204, 214, 216-225, the products of Hrncir et al. appear to be the same as those recited by the instant claims, regardless of their method of manufacture (e.g., see MPEP 2113). That is, both methods produce a library comprising a collection of members of a family; the family comprising a diversity of peptides, polypeptides or protein; the collection comprising at least a nonbiased portion of the diversity of the family.

The libraries of Hrncir et al. meet all of the limitations of the claimed library (see above) except for the product-by-process limitations and thus would either anticipate or render obvious the claimed library because the process of Hrncir et al. produce the same

or a substantially similar product (see above). See MPEP § 2113, "'[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.' *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)." Here, Applicants claims are drawn to a "library" (i.e., a product), but are defined by various method steps that produce a library of corresponding nucleic acids (e.g., see claim 119, "A library ... produced by a method comprising the steps of:") and, as a result, represent "product-by-process" claims. One of ordinary skill would expect the library of a diverse family of peptides, polypeptides or proteins to be the same no matter how it was synthesized. When the prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claimed in a product-by-process claim, a rejection based alternatively on either 35 U.S.C. 102 or 35 U.S.C. 103 is eminently fair and acceptable. PTO is not equipped to make and then compare products. *In re Brown*, 459 F.2d 531, 173 USPQ 685 (CCPA 1972).

For ***claims 124-147, 180-182, 185, 205, 206 and 215***, Hrncir et al. disclose, for example, IgA, IgM and IgG, which represent immunoglobulins (e.g., see page 1041, translation page 1, line 1; see also Tables 2-4). For claims 128-131, Hrncir et al. do not explicitly state that the IgA, IgM and IgG molecules comprise a Fab, but the Examiner contends that this element is inherently disclosed by the Hrncir et al reference as

evidenced by Roitt et al. (e.g., see page 69, figure 4.6, section (1), showing "Fab" portion of molecule; see more generally pages, 67, 68 and 70 detailing the structures of the IgG, IgM and IgA molecules). For claims 132-135, Hrncir et al. do not explicitly state that IgA, IgM and IgG molecules comprise a heavy chain, but the Examiner contends that this element is inherently disclosed by the Hrncir et al. reference as evidenced by Roitt et al. (e.g., see page, figure 4.6, section (1), showing heavy chain portion of the molecule; see more generally pages, 67, 68 and 70 detailing the structures of the IgG, IgM and IgA molecules). For claims 136-139, Hrncir et al. disclose IgM, IgG and IgA (e.g., see page 189, Table 3). For claim 206, Hrncir et al. do not explicitly state that the IgA, IgM and IgG molecules comprise an FR1 region, but the Examiner contends that this element is inherently disclosed by the Hrncir et al. reference as evidenced by Roitt et al. (e.g., Roit, page 80, column 1, middle paragraph; see also figure 4.28 showing that all antibodies contain an FR1 region). For claims 140-147, Hrnicir et al. disclose the use "human" antibodies (e.g., see Summary showing that the antibodies were derived from "human" patients with SLE). For claims 180-182, Hrnicir et al. also disclose the use of samples take from patients with an "automimmune" disease like SLE (e.g., see Summary).

For ***claims 210 and 212***, Hrncir et al. do not explicitly state that the IgA, IgM and IgG molecules comprise an FR3 region, but the Examiner contends that this element is inherently disclosed by the Hrncir et al. reference as evidenced by Roitt et al. (e.g., Roit, page 80, column 1, middle paragraph; see also figure 4.28 showing that all antibodies contain an FR3 region). In addition, Hrncir et al. do not explicitly state that IgA, IgM and IgG molecules comprise a light chain, but the Examiner contends that this element is

inherently disclosed by the Hrncir et al. reference as evidenced by Roitt et al. (e.g., see page, figure 4.6, section (1), showing light chain portion of the molecule; see more generally pages, 67, 68 and 70 detailing the structures of the IgG, IgM and IgA molecules). In addition, Hrncir et al. do not explicitly state that IgA, IgM and IgG molecules comprise a heavy chain, but the Examiner contends that this element is inherently disclosed by the Hrncir et al. reference as evidenced by Roitt et al. (e.g., see page, figure 4.6, section (1), showing heavy chain portion of the molecule; see more generally pages, 67, 68 and 70 detailing the structures of the IgG, IgM and IgA molecules).

Conclusion

Applicant's amendment necessitated any new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jon D Epperson whose telephone number is (571) 272-0808. The examiner can normally be reached Monday-Friday from 9:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Paras can be reached on (571) 272-4517. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jon D. Epperson, Ph.D.
March 18, 2006

JON EPPERSON, PH.D.
PATENT EXAMINER